NARSC National Applied Resource Sciences Center
QUARTERLY REPORT

GEOGRAPHIC SCIENCES LAB EXPANDS ITS PRODUCT LINE

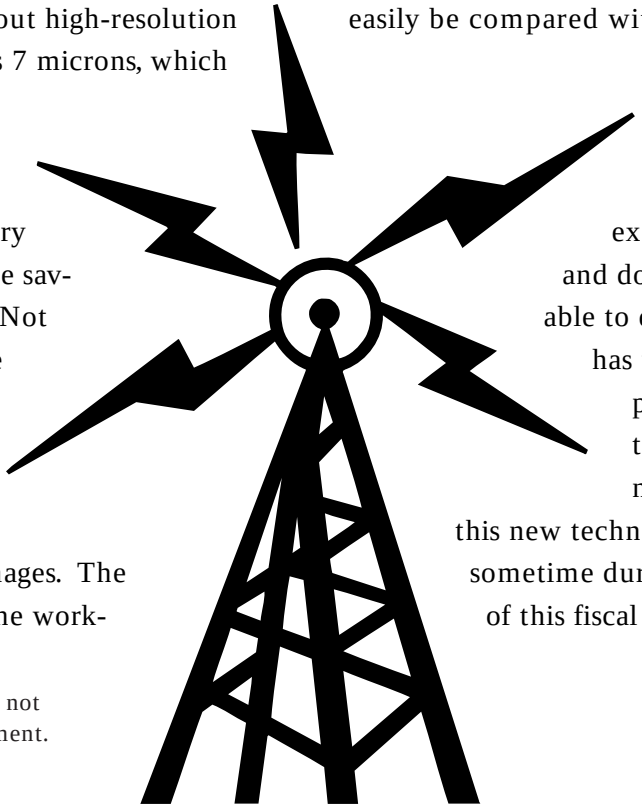
NARSC's Geographic Sciences Lab will soon have a new line of products to offer—digital orthophotos from any hard-copy imagery will soon be available to all BLM field offices. In the past, the lab either had to provide original aerial photos or hard-copy reproductions. Now, for the first time, the lab will be able to capture digital images that can be delivered directly to workstations in the field.

The new product line came about as a result of input from the field. Concerns were raised about the cost of having to obtain these products elsewhere, and about the potential damage that could occur when shipping aerial photos. To address these concerns, at the end of fiscal year 1997, the lab purchased a Zeiss[1] photogrammetric scanner and softcopy workstation. This equipment will allow the lab to produce digital orthophoto products in-house.

The scanner has the capability to scan either rolls or frames of transparencies and turn out high-resolution images with a pixel size as small as 7 microns, which is roughly equivalent to 3,600 dots per inch. The workstation performs a number of functions that streamline the photogrammetry process, resulting in significant time savings, especially on larger projects. Not only can the workstation complete the compilation that was previously done using analytical stereoplotters, it can also apply radial correction and remove natural distortion from scanned images. The digital orthophotos produced on the workstation can be sent directly to the field and imported directly into ARC/INFO or ERDAS, two components of BLM's Geographic Information System (GIS) suite of software.

The new digital orthophoto products can be used for a number of applications. For example, new imagery of a specific area can be scanned and captured digitally. Then, 30-year old images of the same area can be pulled from the archives and scanned. These images can be corrected and reformatted into a map base that can easily be compared with the newer imagery.

According to Lab Manager Jim Turner, "This equipment greatly expands the utility of our archive. It allows us to exploit the GIS software we have and do some things we've never been able to do before." Any customer who has used photogrammetric image processing and GIS services in the past will benefit from these new products. Products from this new technology should become available sometime during the second quarter of this fiscal year.



[1] Use of product and/or brand names does not imply endorsement by the U.S. Government.

1st Quarter
Dec '97

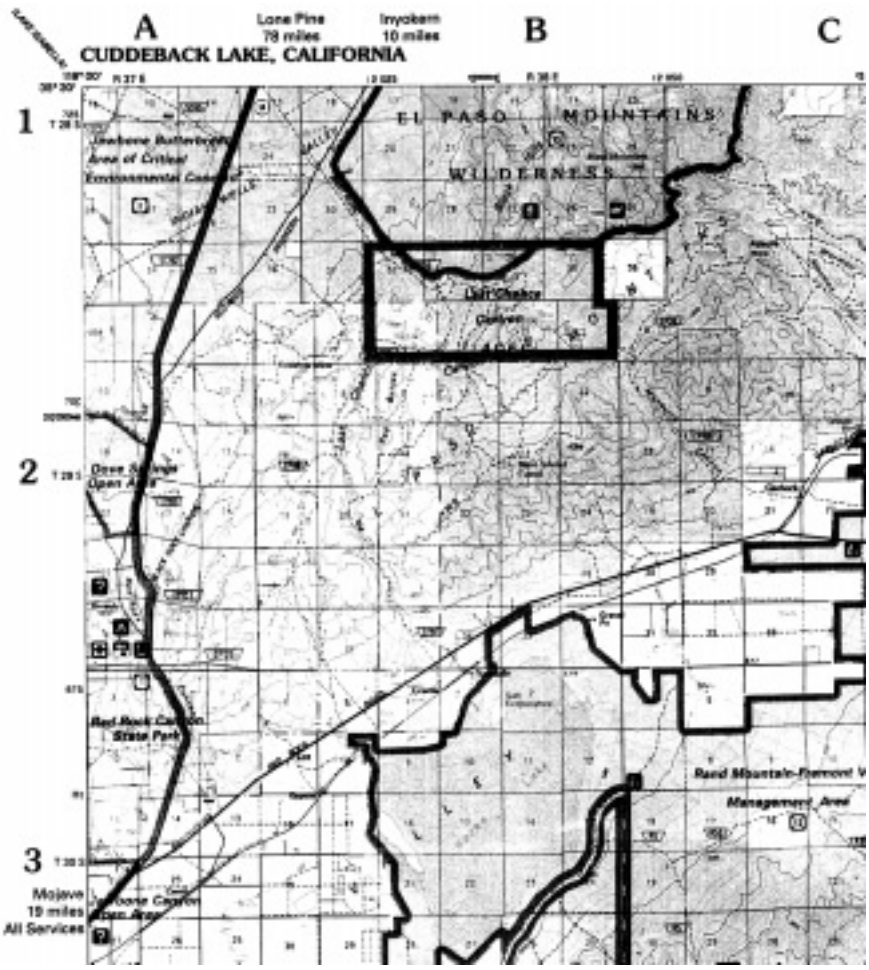
AUTOMATING BLM'S 100k MAP SERIES

BLM's 1:100,000 scale administrative maps are clearly some of its most popular and successful products. There are 750 maps in this series covering the 11 Western States. These maps are available to the public and often sell out quickly, resulting in the need for frequent revisions and reprints to keep up with the demand.

NARSC cartographers revise the maps at the request of State Offices, using mostly traditional mapmaking techniques. In an average year, BLM revises 50 to 60 of the maps and reprints about the same number. "That's the maximum we can currently handle," says Bill Jackson, who is responsible for maintaining the series, "but the demand is much greater than this."

That's why NARSC recently set out to develop a fully digital process, based on ArcInfo software, for building and revising the maps. "These maps contain an incredible amount of information," says Chris Smith, project leader, who is integrating data from different formats and sources, including the U.S. Geological Survey, the Geographic Coordinate Data Base, the Automated Land and Mineral Record System, and State agencies. "It's an enormous task. We want our process to be data-driven and incorporate high quality digital data from multiple sources."

The digital process will be phased in over time, as cartographers learn new techniques and build the digital base maps. "I believe that in a year from now, we'll be in a position to start transitioning to a digital revision process," says Fred Batson, supervisor of the Geographic Sciences Group. After that, revising the maps will be quicker and easier. The maps will still be printed in the traditional manner, however, to preserve the high quality and to maintain the low cost of about 40 cents per copy.



Private corporations like Rand McNally and the National Geographic Society have already made the jump to fully automated mapmaking. Federal agencies are also making major strides in automating their mapmaking processes. "It's such an investment in effort up front, which is why it was never done in the past," says Smith. "But there's no doubt this is the way to go. Ten years ago, that was debatable, but not anymore."

WHERE ON THE WEB

We hope the following web sites will provide information that will be helpful to you in completing the various research and technical aspects of your jobs and/or projects.

The Access Board—Also known as the Architectural and Transportation Barriers Compliance Board, this web site provides information on topics such as building and facility design guidelines and transportation vehicle guidelines. (www.access-board.gov)

American Society for Testing and Materials (ASTM)—Useful site for verifying the exact title of a standard and for locating the most recent date and edition of a standard when updating specifications. ASTM has developed and published over 10,000 technical standards. (www.astm.org)

BIRDNET—Contains general information on the science of ornithology, including research assistance, research news, birding information, and legislative updates on ornithological issues. (www.nmnh.si.edu/BIRDNET/)

British Columbia Ministry of Environment, Lands & Parks (Wildlife Branch)—Provides information concerning publications on issues related to general ecosystem studies, including a publication on terrestrial ecosystems mapping technology. (www.env.gov.bc.ca/wld/)

CSU Outreach—Provides links from CSU's web page to numerous resources such as The Water Center. (www.colostate.edu/Outreach/outreach.html)

Davis-Bacon Wage Determination—Provides updated wage rates determined by the U.S. Department of Labor for use in preparing cost estimates. (www.r6.gsa.gov/wagerate)

Fire Effects Information System (FEIS)—Provides ecological and biological information about plant and animal species and the effects of fire on them. (www.fs.fed.us/database/feis/welcome.htm)

The GAP Analysis Program—Presents a geographical approach to planning for biological diversity. GAP Analysis uses GIS to identify "gaps" in biodiversity protection that may be filled by the establishment of new preserves or changes in land-use practices. (www.gap.uidaho.edu/gap)

GPO Access—Provides electronic access to a wealth of important information products produced by the Federal Government. (www.access.gpo.gov/su_docs/index.html)

Incident Management Situation Report—Reports on all the fires being fought in the U.S. and Canada. Updated on a daily basis. (www.nifc.doi.gov/sitreprt.html)

Index of Watershed Indicators—Provides the EPA's first national picture of watershed health. The Index organizes and presents aquatic resource information on a watershed basis. (www.epa.gov/surf/iwi)

If you have a Web site you use in performing your work and would like to share it with others in the BLM, send it via e-mail to krohling(Groupwise) or krohling@nc1155wp.sc.blm.gov (Internet). You can also fax it to Kathy Rohling at (303) 236-6450. Please provide the title, a brief two-line description, and the Internet address.

FINDING OASES IN THE CALIFORNIA DESERT

As time goes on, things change, especially when it comes to land management—roads, ownership boundaries, and new regulations. Many changes have taken place over the last decade in the California Desert, including passage of the California Desert Protection Act in 1994. This legislation triggered the formation of the California Desert Innovative Management Lab, an interagency effort to manage the area's public land and resources.

(continued on page 4)

(continued from page 3)

The Lab's interagency Desert Outreach Team was formed to revise the BLM maps of the California Desert, including the Desert Access Guide series of recreational maps created in the mid 1980s. The new maps will update management boundaries, office locations, phone numbers, and other information. The format of the maps will be consistent with the BLM 1:100,000 scale administrative map series.

The 32 new Desert Access Guide (DAG) maps, covering the BLM Barstow, El Centro, Needles, Palm Springs, and Ridgecrest Resource Areas, will show recreation areas, off-road vehicle (OHV) areas, and major roads. Death Valley and Joshua Tree National Parks, along with the Mojave National Preserve, are also included. Other agencies represented on the DAGs are California State Parks, Department of Defense, U.S. Fish and Wildlife Service, and the USDA Forest Service.

"The best part of the DAGs is that they represent land status and give our customers an idea of who manages the land," says Roni Fortun, former DAG project coordinator, now at the Tucson Field Office.

The map series is also intended to serve the recreational needs of the public visiting the area. The back of each map includes text on points of interest, things to do and see, safety tips, rules and regulations, and office addresses.

Once information is consolidated from the various agency representatives, the map series will be produced by NARSC's Geographic Sciences Group. The first map, Cuddeback Lake, has already been completed, and several others are currently in production. Twenty more maps are expected to be completed this fiscal year and the rest in early FY 99.

"The services that NARSC has been able to provide the California Desert District on the updating and revisions of the DAGs have been exceptional," adds Fortun. "It's great to have the mapping, layout, and editorial services located under one roof."

DIRECTOR'S CORNER

It's hard to believe that the first quarter of the fiscal year is already behind us and that 1997 is also gone. The staff at NARSC is well into their projects for this year with a workload that is ever growing.

The articles for this quarter all have a common theme of incorporating some of the latest technology with the business of the Bureau. The Desert Access Guides (Finding Oases in the California Desert) have provided us with an opportunity to apply our skills and capabilities to a project that is very important not only to BLM in California, but also to our many partners in the California Desert area. Automating the production of the 1:100,000 scale map series (Automating BLM's 100k Map Series) has been a long-standing goal of NARSC; as you can see, we are making significant progress in this area. Geographic Sciences Lab Expands Its Product Line describes some new capabilities that our Geographic Sciences Lab has acquired that will allow NARSC to provide a new line of digital orthophoto products.

NARSC is committed to bringing the best proven technology to the Bureau and making it available to all offices. Please feel free to contact our staff regarding any of these applications or other applications that you may be interested in.

Finally, we at NARSC wish all of you a productive and successful 1998!

Lee Barkow

NARSC Progress Report

Why a progress report? NARSC is committed to providing quality products and services, which includes feedback to customers and reporting of accomplishments. The intent of this table is to share with you, in general terms, what we have planned, what we have accomplished, and what we have left to do. This progress report demonstrates our commitment and accountability to our customers.

— Lee Barkow

Office	Active Projects/Services	FY 98 Projects/Services Due Through 1st Quarter	FY 98 Projects/Services Completed Through 1st Quarter
AK	4	4	4
AZ	8	0	0
CA	18	1	0
CO	14	1	1
*DC	4	3	2
ES	0	1	1
ID	18	4	3
MT	11	0	0
NV	13	6	4
NM	10	2	2
NIFC	2	2	2
NTC	6	2	2
OR	23	3	3
UT	15	7	6
WO	112	7	6
WY	14	5	4
Totals	272	48	40

*DC = Denver Centers

Projects/Services represented in this report require more than 40 hours of labor or operational funds; assistance provided by NARSC not meeting this threshold is not displayed. Active projects/services represented in this report may have due dates beyond the current fiscal year.

NARSC Directory

Office of the Director (RS-100)

NARSC Director . . . . . Lee Barkow . . (303) 236-6454
Administrative Assistant . . . . . Rheda Dodd . . (303) 236-6454

Coordinator of projects for ES, WO, & Other Agencies . . . . . Mike Kirby . . (303) 236-6491
Coordinator of projects for AZ, CA, NM, NV, NTC, OR & Denver Centers . . Dave Schafersman . . (303) 236-1143
Coordinator of projects for AK, CO, ID, MT, UT, WY, & NIFC . . . . . Al Strobel . . (303) 236-8859

Geographic Sciences Laboratory Manager . . . . . Jim Turner . . (303)236-0840

BLM Library (RS-150A) . . . . . (303) 236-6649

Administrative Group Supervisors

Architecture and Engineering . . . . . (RS-110) . . . . . L.J. Porter . . . . (303) 987-6864
Geographic Sciences . . . . . (RS-120) . . . . . Fred Batson . . . . (303) 236-6376
Natural Resource Sciences . . . . . (RS-130) . . . . . Dan Muller . . . . (303) 236-7198
Resource Analysis and Assessment . . (RS-140) . . . . . Bill Krech . . . . (303) 236-0150
Information and Communications . . (RS-150) . . . . . Roger Molinar . . . . (303) 236-6547

NARSC Home Page—http://www.blm.gov/narsc

NARSC National Applied Resource Sciences Center

Bureau of Land Management
Denver Federal Center, Building 50
P.O. Box 25047
Denver, CO 80225-0047